(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 474 934 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **90310083.2**

(22) Date of filing: **14.09.90**

(51) Int. Cl.5: **A46B 9/02**, A46B 1/00, A45D 40/26

(43) Date of publication of application:
18.03.92 Bulletin 92/12

(84) Designated Contracting States:
DE FR GB

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(54) Brush bristle arrangement.

(57) An applicator (1) for a liquid, semi-liquid, creamy, paste-like or viscous cosmetics material comprising a handle portion (2) and a head portion (3) having a multiplicity of bristles (5) projecting laterally therefrom, said multiplicity of bristles (5) being so arranged and shaped as to form interstices (12) of a converging shape or configuration to thereby grip eyelashes (8) when the bristles (5) are drawn through the eyelashes in use.

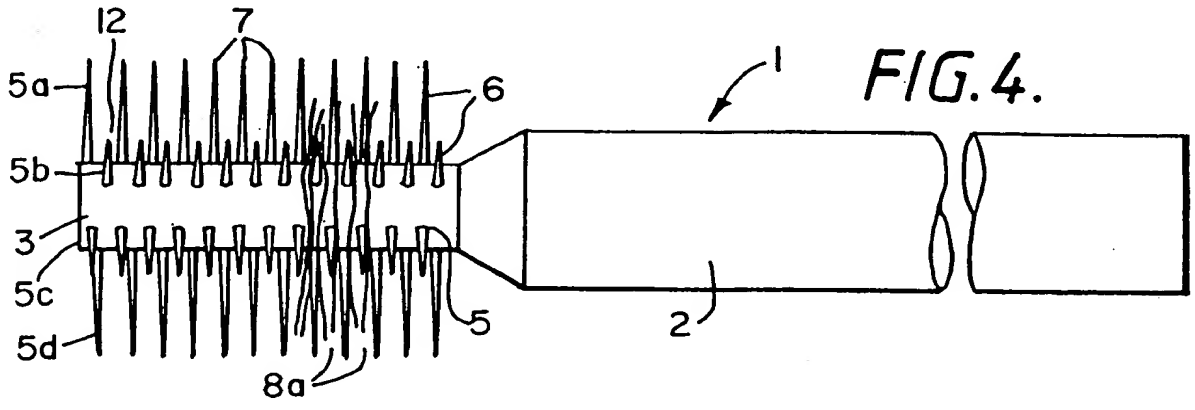

FIG. 4.

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This invention relates to an applicator for applying a liquid, semi-liquid, creamy, paste-like or viscous material. It is particularly, but not exclusively, concerned with an applicator for applying a colouring cosmetics product (mascara) to the eyelashes.

Various forms of mascara applicator are known. In a first such known form, a miniature twisted wire stem brush projects axially from the end of a carrier shaft, a multiplicity of bristles being rooted in the wire stem and projecting radially therefrom in the form of helical flightings. In a second known form, a multiplicity of laterally projecting flexible teeth or bristles are integrally molded from a plastics material with a stem, the teeth or bristles forming a plurality of circumferentially distributed, axially extending rows.

According to the present invention an applicator for a liquid, semi-liquid, creamy, paste-like or viscous cosmetics material of the kind comprising a handle portion and a head portion having a stem and a multiplicity of elements projecting laterally therefrom, is characterised in that said multiplicity of elements are so arranged and shaped as to form interstices of a converging shape or configuration to thereby grip eyelashes when the applicator is drawn through the latter in use.

The bristles are preferably arranged in at least first and second circumferentially adjacent rows extending along at least part of said stem, the positions of the filaments of one row being longitudinally offset, or staggered, relative to the positions of the filaments in the other row.

The rows may extend parallel to the axis of the support.

Several such rows, e.g. ten or more, may be circumferentially distributed around the whole or part of the circumference of the support. The relative staggering need not be applied to all of the rows of filaments. Accordingly a first group of adjacent rows may be arranged such that each is staggered relative to at least one of its neighbours, while a second group may be arranged without any such staggering.

In a particular arrangement according to the invention, the filaments are regularly spaced along said rows, and the filaments in adjacent rows are offset by half the filament spacing so that every other row is in circumferential alignment.

With the arrangement of filaments according to the invention, the eyelashes are made to fall into a more convoluted path between the filaments of adjacent rows, thus ensuring a more efficient application to the eyelashes of the material retained in the interstices between the filaments.

The filaments are preferably integrally molded with the support from a suitable plastics material.

How the invention may be carried out will now be described by way of example only and with reference to the accompanying drawings in which:

Figure 1 is a side elevational view illustrating part of a known form of integrally molded mascara applicator;

Figure 2 is an enlarged perspective view of an end portion of the head of the applicator according to the present Invention;

Figure 3 is a schematic view illustrating the manner of application of mascara to the eyelashes using a brush-type applicator;

Figure 4 is a side elevational view illustrating part of an applicator in accordance with the present invention; and

Figures 5A, 5B and 5C show diagrammatically three further ways in which the gripping of the eyelashes can be achieved.

The background to the present invention will now be described with reference to Figures 1 to 3.

An integrally moulded applicator has a handle 2, a head 3 and a bristle arrangement 4.

Bristles or elements 5 are arranged in rows 6 the bristles 5 in each row 6 being aligned with the bristles in other row in order to form a multiplicity of rings 7. The rings 7 are regularly spaced axially along the applicator head 3.

Figure 3 illustrates the manner in which the applicator 1 of Figures 1 and 2 is used for the application of mascara to eyelashes. The applicator, with mascara retained in the interstices between the eyelashes 8 extend generally perpendicularly to the axis of the applicator head 3, and therefore enter the spaces 10 between the successive rings 7 of bristles 5. As the eyelashes slide through the inter-ring spaces 10, mascara which is retained between adjacent bristles 5 of the respective rows 6 is applied. However, mascara is also retained in the spaces between adjacent bristles5 in the respective rings (e.g. space 11 in Figure 2) and the material in these latter spaces generally remains unused since the eyelashes 8 generally do not enter such spaces 11.

An embodiment of the invention will now be described with reference to Figure 4, the same reference numerals being used to denote the same or equivalent parts to those shown in Figures 1 to 3 and whose description will therefore not be repeated.

The bristles 5 are again arranged in a plurality of circumferentially distributed, axially extending rows, the bristles being regularly spaced in the rows 6.

However, the positions of the bristles 5 in each row 6 are longitudinally offset, or staggered, relative to the positions of the bristles in at least one neighbouring row. For example, the bristles 5a in the row 6a are offset longitudinally with respect to the bristles 5b in the adjacent upper row 6b and

with respect to the bristles 5c in the adjacent lower row 6c. The offset between the bristles 5 of one row 6 and the bristles 5 of the adjacent row 6 is exactly half the bristle spacing so that the bristles in every other row are circumferentially aligned. Thus, the bristles 5a are circumferentially aligned with the bristles 5c, and the bristles 5a are circumferentially aligned with the bristles 5d in the lowermost illustrated row 6d.

Reference numeral 8a in Figure 4 indicates a few eyelashes in the positions they would adopt relative to the bristles 5 during mascara application. Because of the axial offset, or staggering, of the bristles 5 of respective adjacent rows, the interstices 12 between the bristles of one row are likewise offset relative to the interstices between the bristles of an adjacent row. Accordingly, as the applicator 1 is stroked against and along the eylashes away from the eyelid, the eyelashes are forced to follow convulated paths which meander between the non-aligned interstices of the adjacent rows 6. Furthermore, the eyelashes will flex longitudinally as they pass through these interstices. This produces a more efficient application of the material from the interstices onto the eyelashes than was achieved in the known arrangement of Figure 1 with circumferentially registered bristles and interstices.

Figure 4 illustrates only one way the invention may be realised. Other arrangements of the bristles are possible within the broad concept defined by the claims.

In particular, there could be as few as two rows of bristles and the aforementioned gripping shape of the interstices could be achieved by any relation positioning of the bristles which achieved the defined gripping effect.

This gripping can be achieved by either the shaping of the bristles or their relative positioning with respect to one another or a combination of both.

Furthermore, a brush could have some of its bristles arranged as in the prior art (Figures 1-3) and some arranged in accordance with the present invention (e.g. Figure 4).

Furthermore, a brush could have some of its bristles arranged as in the prior art (Figures 1-3) and some arranged in accordance with the present invention (e.g. Figure 4).

Figure 5 shows three possible arrangements for the bristles or elements (5) in order to achieve the gripping of the eyelashes (8). In these embodiments, the bristles or elements (5) are each of a tapered shape. However, other shapes could be employed to achieve the gripping effect.

Claims

1. An applicator (1) for a liquid, semi-liquid, creamy, paste-like or viscous cosmetics material of the kind comprising a handle portion (2) and a head portion (3) having a stem and a multiplicity of elements (5) projecting laterally therefrom, characterised in that said multiplicity of elements (5) are so arranged and/or shaped as to form interstices (12) of a converging shape or configuration to thereby grip eyelashes or the like (8), when the said elements (5) of applicator (1) are drawn through the latter in use.

2. An applicator as claimed in claim 1, wherein the elements (5) are arranged in rows (6) which extend parallel to the axis of the head portion.

3. An applicator as claimed in claim 1, wherein the elements (5) are arranged in several rows (6) which are circumferentially distributed around the circumference of the head portion.

4. An applicator as claimed in claim 3, wherein the elements (5) are regularly spaced along said rows (6), and the elements (5) in adjacent rows (6) are offset.

5. An applicator as claimed in claim 4, in which the offset comprises half the element spacing so that every other row is in circumferential alignment.

6. An applicator as claimed in claim 1, wherein the elements (5) are integrally molded with the head portion from a suitable plastics material.

7. An applicator as claimed in claim 1, in which the said converging shape or configuration is achieved solely by the shape of the individual elements.

8. An applicator as claimed in claim 1, in which the said converging shape or configuration is achieved solely by the disposition of the individual elements.

9. An applicator as claimed in any previous claim, in which each element is of tapered shape.

FIG.1.

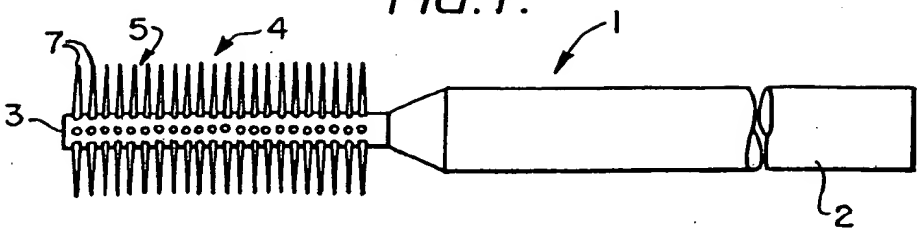


FIG.2.

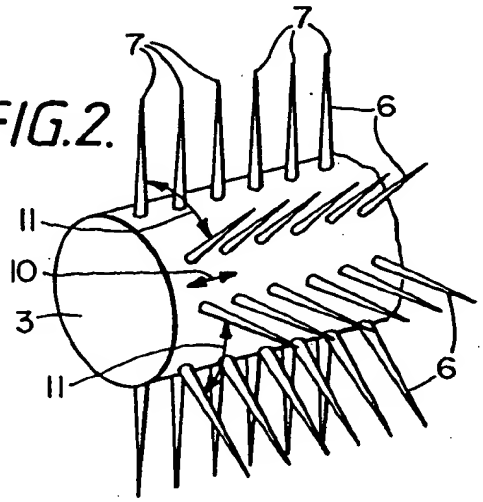
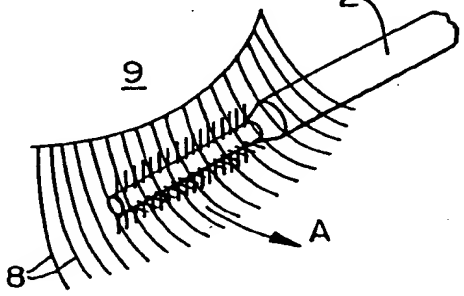


FIG.3.



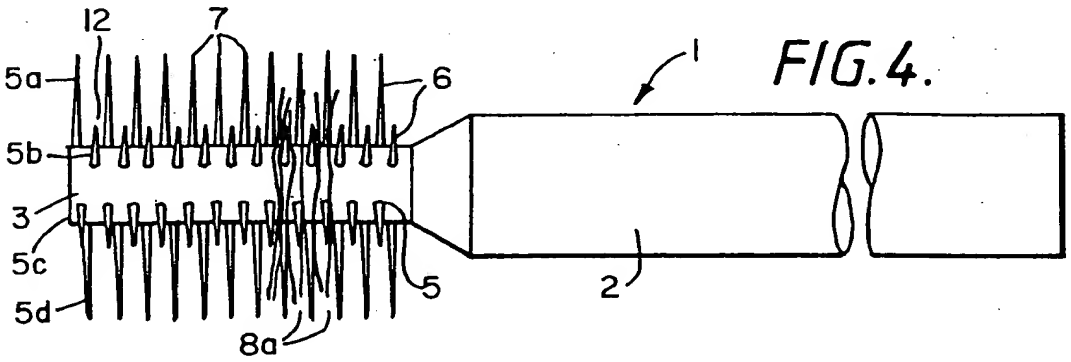


FIG.4.

FIG.5A.

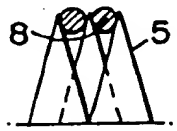


FIG.5B.

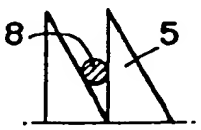
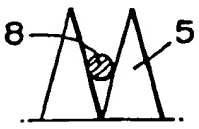


FIG.5C.



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EUROPEAN SEARCH REPORT

Application Number

EP 90 31 0083

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	EP-A-0038524 (KARL GEKA-BRUSH) * figure 1 *	1-5, 8	A46B9/02 A46B1/00
A		6	A45D40/26
X	FR-A-2505633 (L'OREAL) * page 5, line 26 - page 7, line 25; figures 1, 2 *	1-6, 8	
X	DE-A-2559273 (BLANKSCHEIN) * figures 1, 5 *	1-3, 7, 9	
X	EP-A-0204466 (COLE) * figures 5, 6 *	1-3, 7, 9	
A	FR-A-2185200 (CURTET)		
A	US-A-3968536 (LEIGHTON)		
A	US-A-3862639 (SCHEFER)		
A	US-A-4565205 (TAYLOR)		

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

A46B
A45D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	23 MAY 1991	SIGWALT C.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
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